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The genus *Isotomiella* (Isotomidae: Collembola) in Japan, with descriptions of three new species

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Abstract Numerous specimens (307 individuals) of *Isotomiella* Bagnall, 1939 collected from various regions in Japan were examined. It revealed that they consist of three new species. *Isotomiella japonica* sp. nov. is closely related to *Isotomiella minor* (Schäffer, 1896), differing by the chaetotaxy on Abd. I and chaetae on anterior side of manubrium, and distributed in the northeast Japan. *Isotomiella tamurai* sp. nov. is closely related to *I. hirsuta* Bedos and Deharveng, 1994, differing by the chaetotaxy of Ant. IV, tibiotarsus and Abd. IV, and is common in the southwest Japan. *Isotomiella fujisana* sp. nov. is closely related to *I. hygrophila* Sterzyńska & Kapruś, 2001, differing by the chaetotaxy of Ant. I and Abd. IV, and distributed only in the mountainous regions above 1500 m alt. in Japan. Those three species were described here, putting stress on the chaetotaxy of them.

Key words: chaetotaxy, distribution, , *Isotomiella japonica* sp. nov., *Isotomiella tamurai* sp. nov., *Isotomiella fujisana* sp. nov.

Isotomiella minor (Schäffer, 1896) has been thought to be distributed widely in Europe (Stach, 1947), U. S. A. (Christiansen & Bellinger, 1998) and Japan (Yosii, 1939, 1969, 1972; Aoki *et al.*, 1976; Niijima, 1976; Suma, 1984, etc.). A lot of new species of *Isotomiella* Bagnall, 1939 have been added recently (Bedos & Deharveng, 1994; Deharveng & Suhardjono, 1994; Sterzyńska & Kapruś, 2001, etc.) and an identification key was provided by Kovac & Palacios-Vargas (2008). Potapov (2001) pointed out that data on the ecology of *I. minor* from Far East Russia and Japan might refer to its allies.

The genus *Isotomiella* Bagnall, 1939 in Japan has so far been considered to be composed of a single species, *Isotomiella minor* (Schäffer, 1896). In this study, however, we closely examined 307 individuals of *Isotomiella*, collected from various regions of Japan, resulting in findings of three new species. Those three new species are described here.

Abbreviations

a_0: unpaired chaeta on anterior chaetal line on the axis of tergites

Abd. I-VI: abdominal segments I-VI

Ant. I-IV: antennal segments I-IV

F: furca

L: body length

m_0: unpaired chaeta on middle chaetal line on the axis of tergites

M; Md, Mdl, Ml: macrochaeta; dorsal, dorso-lateral, lateral macrochaeta

p_0, p_1: unpaired chaeta on posterior chaetal line on the axis of tergites, chaeta on the position next to p_0

s, S: sensory chaeta, large sensory chaeta

sa, sp, spe, spi, spl, Spl, sv: s on anterior, posterior, post-external, post-internal, post-lateral tergites, large spl, sv on ventral tergites

Scx-a, Scx-p: anterior, posterior furcal subcoxa

Th. I-III: pro-, meso-, meta-thorax

Isotomiella japonica sp. nov.

[Japanese name: Yamato-menashi-tsuchi-tobimushi]

(Figs. 1A, 2, 3)

Body length 0.83 mm. Color totally white. Eyes and PAO absent. Abd. V and VI totaly ankylosed. Habitus of *Isotomiella japonica* as in Fig. 1A. Integument dorsally without craters, with primary granules only. Integument channels obscure on Th. II. Pseudopora distinct on Abd. I and II.

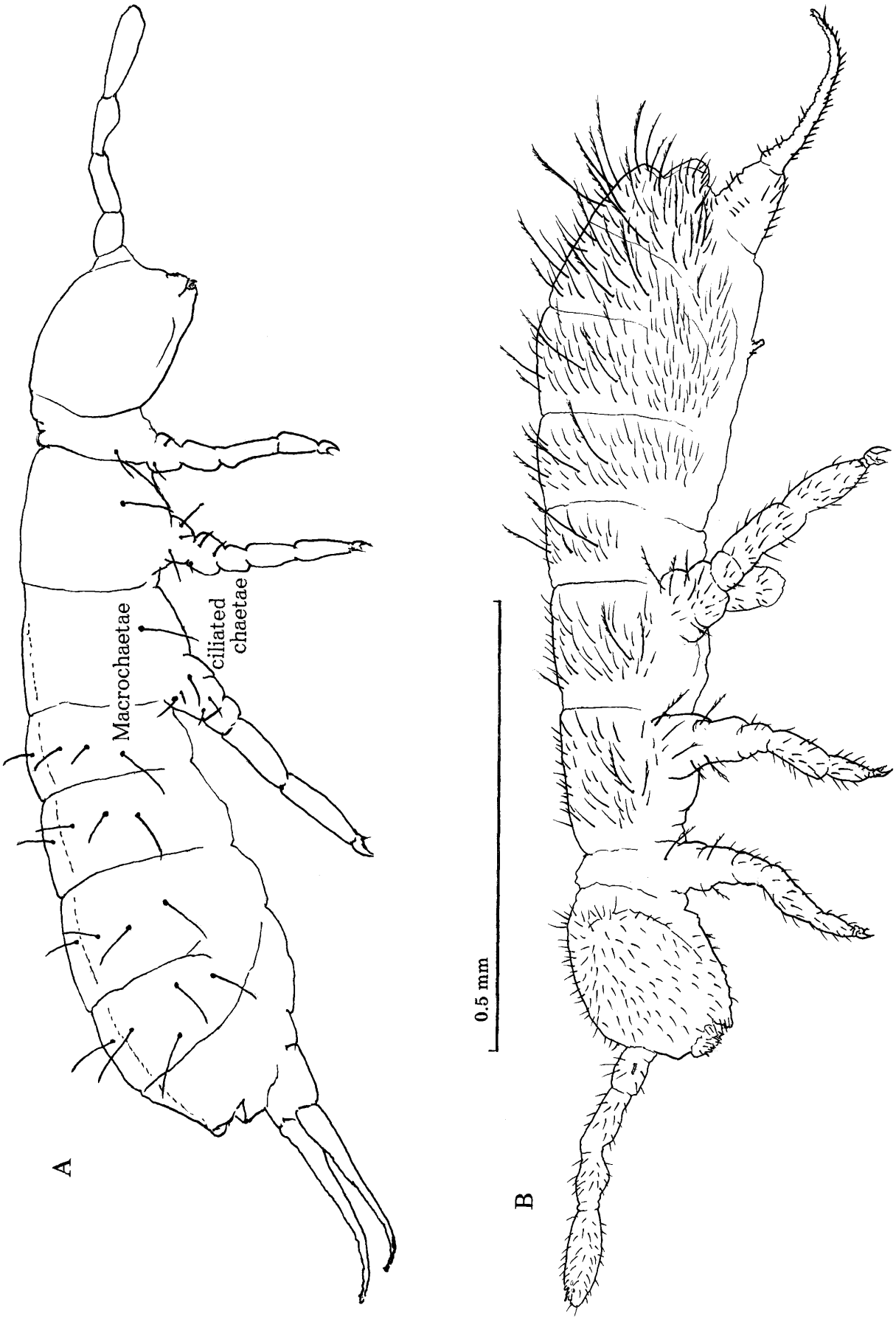

Fig. 1. A, *Isotomiella japonica* sp. nov.; macrochaetae on Abd. I-IV and ciliated chaetae on precoxae and coxae. B, Habitus of *Isotomiella tamurai* sp. nov.

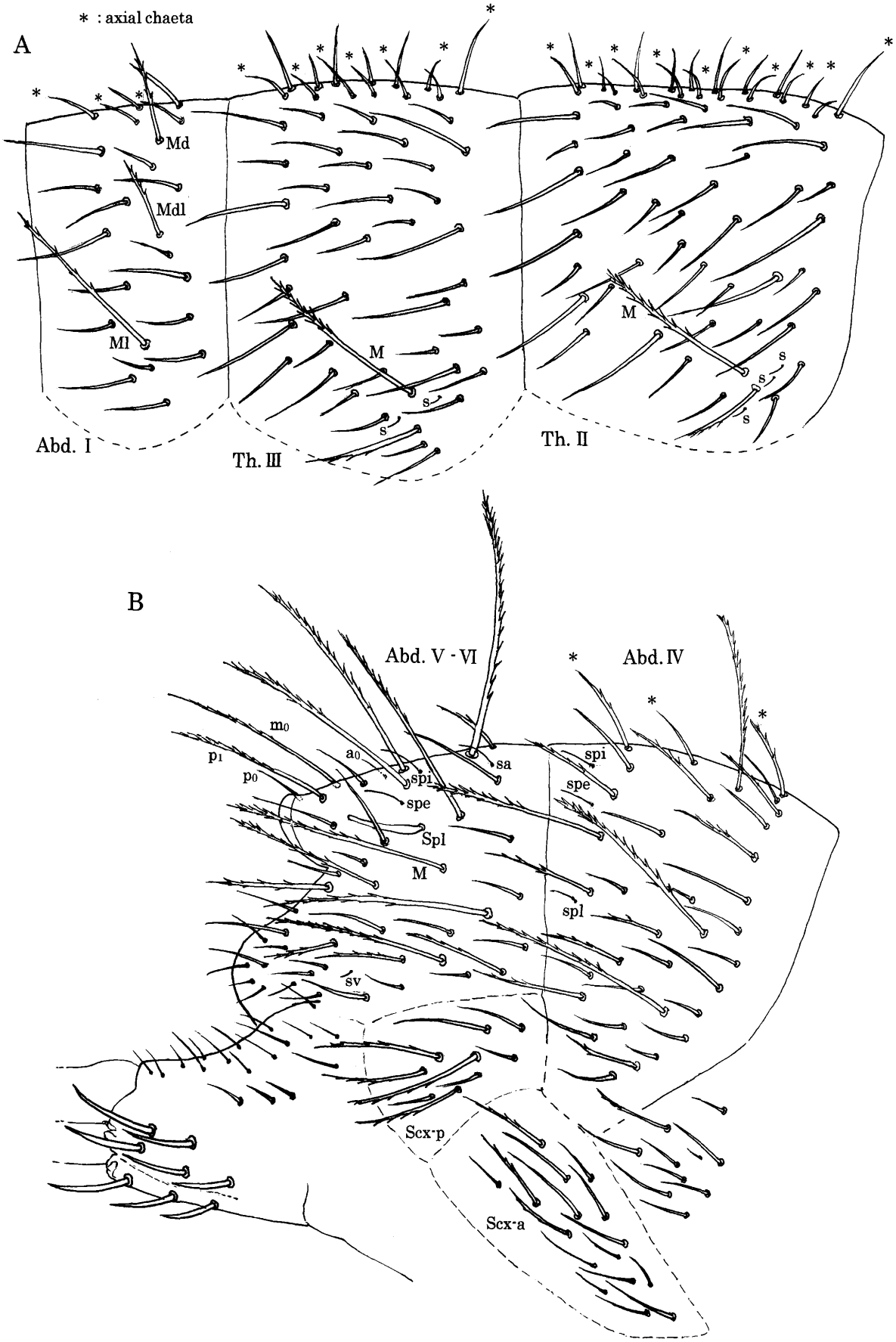

Fig. 2. *Isotomiella japonica* sp. nov. A, Right lateral side of Th. II-Abd. I; B, Right lateral side of Abd. IV and V-VI.

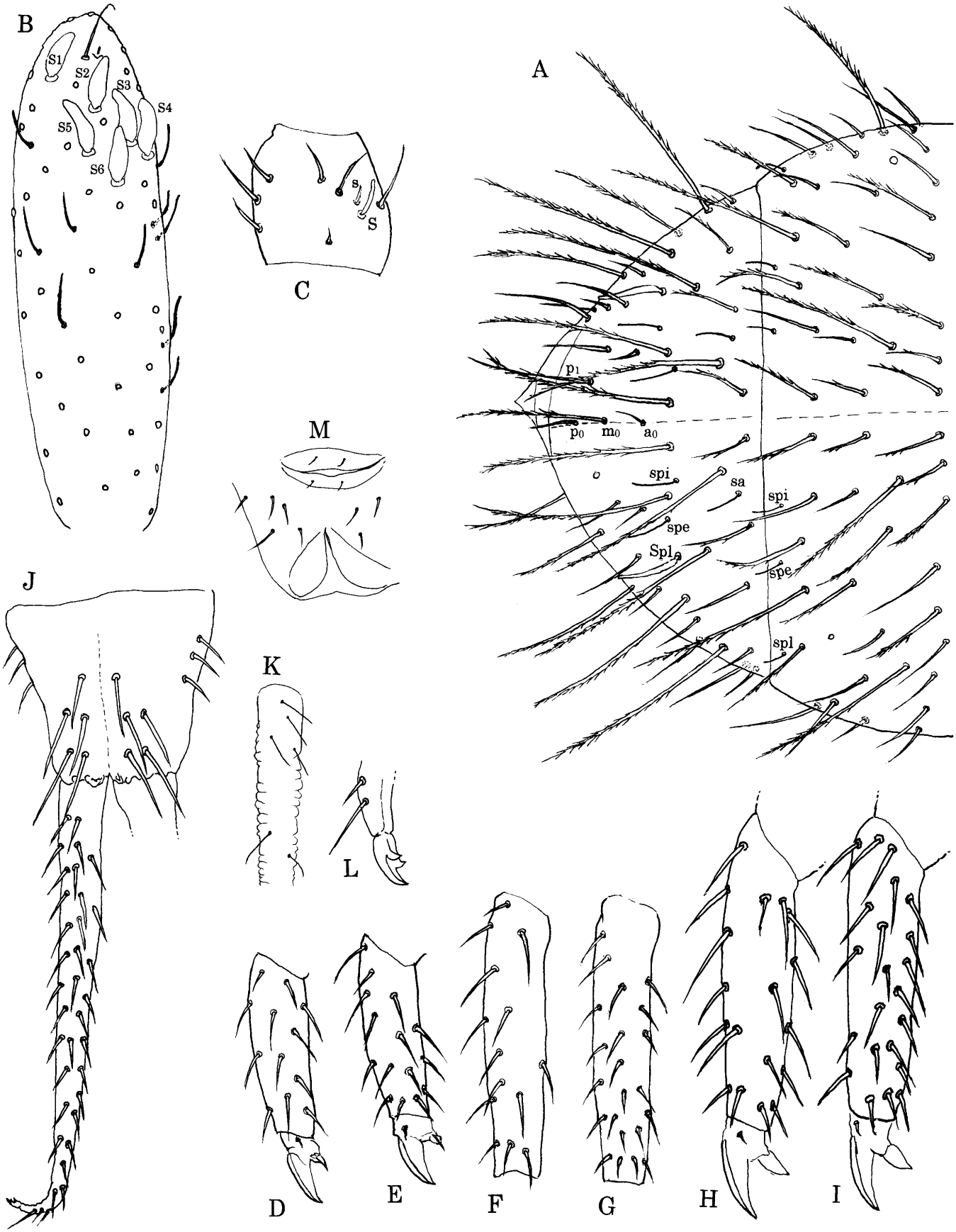

Fig. 3. *Isotomiella japonica* sp. nov. A, Dorsal chatotaxy of Abd. IV and V-VI; B, Ant. IV; C, Ant. I; D-I, Chaetotaxy of tibiotarsus, inside (D, F, H) and outside (E, G, I) of legs I (D, E), II (F, G), III (H, I); J, Anterior side of furca; K, Posterior side of dens; L, Mucro; M, Female genital plates and anal lobes.

Axial chaetotaxy of Th. II-Abd. IV: 20, 14 / 6, 6, 6, 6 (Fig. 2). Macrochaetae ciliated and erected: 1, 1 / 3, 3, 3, 4 on half-tergite of Th. II-Abd. IV (Figs. 1A, 2). Formula of s-chaetae: 3, 2 / 0, 0, 1, 3, 5 on half-tergite of Th. II-Abd. V (Fig. 2). On Th. II and III, a ciliated mesochaeta situated outside of the macrochaeta (Fig. 2A). On Abd. I, Md situated on the line next to the axial line ; macrochaeta Mdl rather short, Mdl : Md = 0.75 (0.70-0.85), Mdl : Ml = 0.41 (0.37-0.45). All mesochaetae on Abd. I simple (Fig. 2A). Ciliated mesochaetae increasing in number from Abd. II to Abd. V-VI (Figs. 2B, 3A). Number of ciliated mesochaeta depending on specimens. On Abd. VI, a_0 and p_0 of smooth mesochaetae, m_0 a ciliated macrochaeta, p_1 a ciliated macrochaeta (Figs. 2B, 3A). Furcal subcoxa anteriorly with 16 chaetae, 3 of which are ciliated, furcal subcoxa posteriorly with 9 chaetae, 4 of which are ciliated (Fig. 2B). Spl of Abd. V long and blunt, Spl : claw III = 1.2 (1.1-1.2), M : Spl = 2.8 (2.7-3.3) (Figs. 2B, 3A).

Antennae long (L : Ant. = 3.6). Chaetae S1-S6 of Ant. IV subequal and ovoid-elongate; for supplementary S-chaetae of Ant. IV, 3-4 internal and 5-6 external (Fig. 3B). Ant. I with 18-21 ordinary smooth chaetae, none of them ciliated, and 2 unequal S-chaetae (S:s = 1.5-2.0) (Fig. 3C). Ant. I : II : III : IV = 7 : 11 : 10 : 18.

Legs without tenent hair (Figs. 3D-I). Six chaetae in the proximal whorl of tibiotarsus I, II (Figs. 3D-G) and 6-9 in III (Figs. 3H, I). Precoxae of legs I, II, III with 1, 3, 3 ciliated chaetae and coxae with 2, 3, 2 ciliated chaetae, respectively (Fig. 1A). Ventral tube with 4+4 distal, 3+3 anterior and 2+2 posterior chaetae. Tenaculum with 4+4 teeth and 1 chaeta. Furca long (L : F = 3.6). Manubrium with 2+2, 2+2, 1+1 anterior-distal, 3 lateral and 15+15 posterior chaetae ; the distal 4 chaetae on anterior side of manubrium of almost the same thickness and the inside pair a little shorter than the outside (outside : inside chaeta = 1.18) (Figs. 2B, 3J). Dentes with 6 posterior (Fig. 3K) and 36 anterior chaetae (Fig. 3J). Mucro tridentate (Fig. 3L). Genital plates in female with two chaetae each (Fig. 3M).

Males not found yet.

Holotype: Mt. Iwate, Takizawa Village, Iwate, Japan, 1770 m, 8-Sep.-1982, H. Harada leg. **Paratype:** 1 exp., same data as for holotype. Holotype (Type No. 3269, Kyushu Univ.) and 1 paratype are deposited in Entomological Laboratory, Faculty of Agriculture, Kyushu University.

Distribution: The species is common in lowlands and high altitude of the northeast Japan (Table 1; no.1-3, 5, 7-11, 15).

Remarks: The chaetotaxy of *I. japonica* is almost the same as for *I. minor*, differing by the following characters: Md on Abd. I situated next to the axial line and no chaetal line between them (a chaetal line consisting of two mesochaeta exists between the axial and Md chaetal lines in *I. minor* (refer to Deharveng, 1989)); the distal 4 chaetae on anterior side of manubrium are almost the same size (the outer pair of chaeta is the longest and the thickest in *I. minor* (refer to Stach, 1947)).

Isotomiella tamurai sp. nov

[Japanese name: Tamura-menashi-tsuchi-tobimushi]

(Figs. 1 B, 4, 5)

Body length 1.0 mm. Color totally white. Eyes and PAO absent. Abd. V and VI totaly ankylosed. Habitus of *Isotomiella tamurai* as in Fig. 1B. Integument dorsally without craters, with primary granules only. Integument channels obscure on Th. II (Fig. 4A). Pseudopora distinct on Abd. I and II.

Axial chaetotaxy of Th. II- Abd. IV; 20, 14 / 6, 6, 6, 6 (Figs. 4A, C, D). Macrochaetae ciliated and erected; 1, 1 / 3, 3, 3, 4 on half-tergite of Th. II-Abd. IV (Figs. 1B, 4B, C, D). On Abd. I, macrochaeta Mdl shorter than or subequal to the corresponding mesochaeta of posterior row (Fig. 4C), Mdl : Md = 0.43 (0.32-0.52); Mdl : Ml = 0.35 (0.27-0.39). Ciliated mesochaetae several on Abd. IV; Abd. V-VI with most chaetae ciliated (Fig. 4D). On Abd. VI, a_0 of smooth, short and slender mesochaeta, m_0 of ciliated macrochaeta, p_0 of ciliated mesochaeta, p_1 of ciliated macrochaeta (Fig. 4D). Formula of s-chaetae of the *minor*-type: 3, 2 / 0, 0, 1, 3, 5 on half-tergite of Th. II-Abd. V (Figs. 4B-D). Spl on Abd. V thick and rather long (Spl : claw III = 1.1; M : Spl = 3.1-3.4) (Fig. 4D). Sa, spe and spi on Abd. V about 2 times as long as s-chaetae of Abd. IV and a half of Spl (Fig. 4D).

Chaetae of labrum 4 / 5, 5, 4 (Fig. 5C). Antennae long (L : Ant. = 3.4). Chaetae S1-S6 on Ant. IV subequal and ovoid-elongate; supplementary S-chaetae on Ant. IV thick, subcylindrical, of which 7-8 are internal and 8-10 external (Fig. 5A). Ant. I with about 20 ordinary smooth chaetae and 2 unequal S-chaetae (S:s = 2.0) (Fig. 5B). All chaetae on head smooth.

Six chaetae in the most proximal whorl of tibiotarsus I-III (Figs. 5D-I). Precoxae of legs I, II, III with 1, 2, 2 ciliated chaetae, respectively (Fig. 1B). Unguis plump without inner tooth (Figs. 5D-I). Unguiculus without tooth. Ventral tube

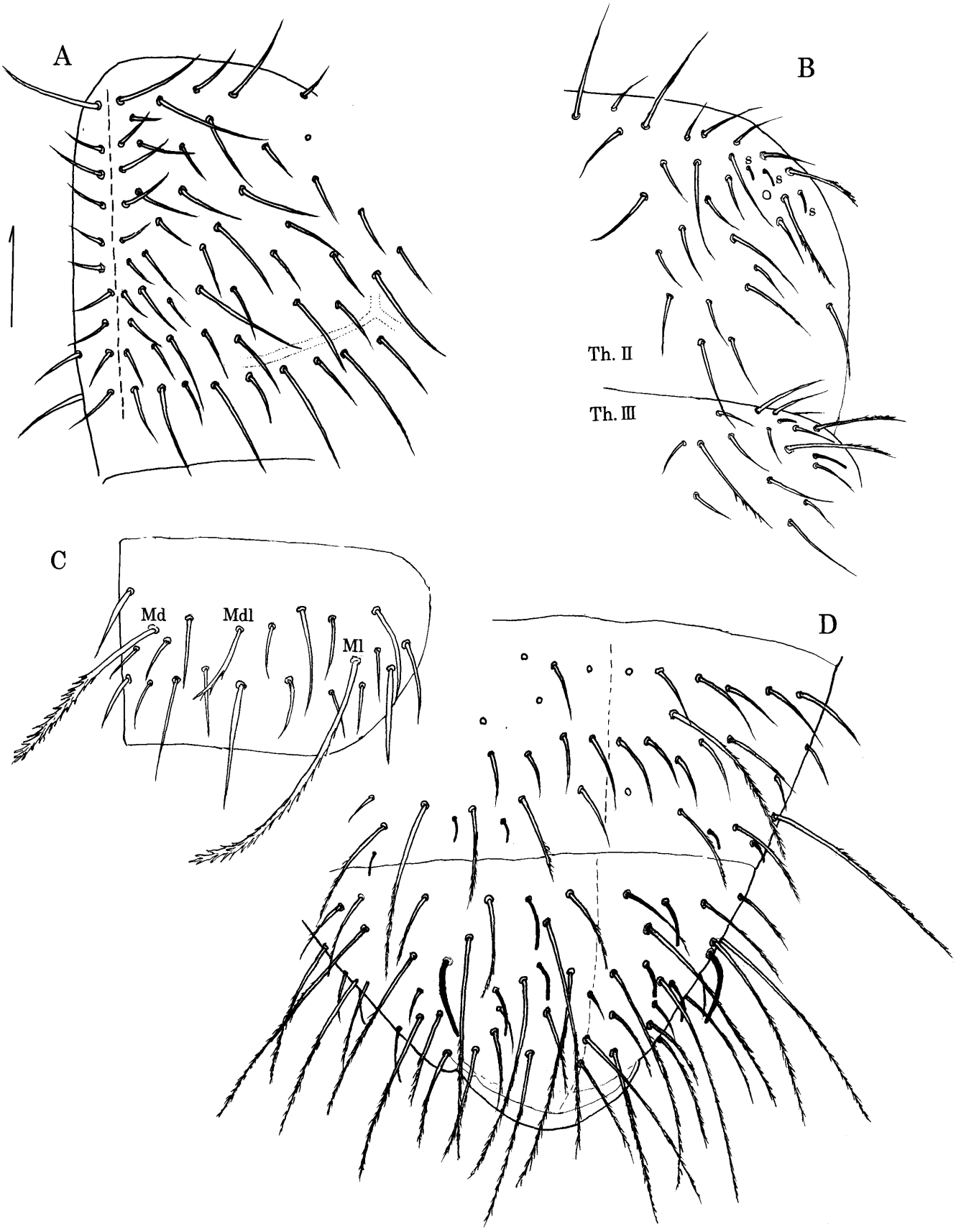

Fig. 4. *Isotomiella tamurai* sp. nov. A, Right dorsal side of Th. II; B, Right lateral side of Th. II and III; C, Right dorsal side of Abd. I; D, Dorsal chaetotaxy of Abd. IV and V-VI.

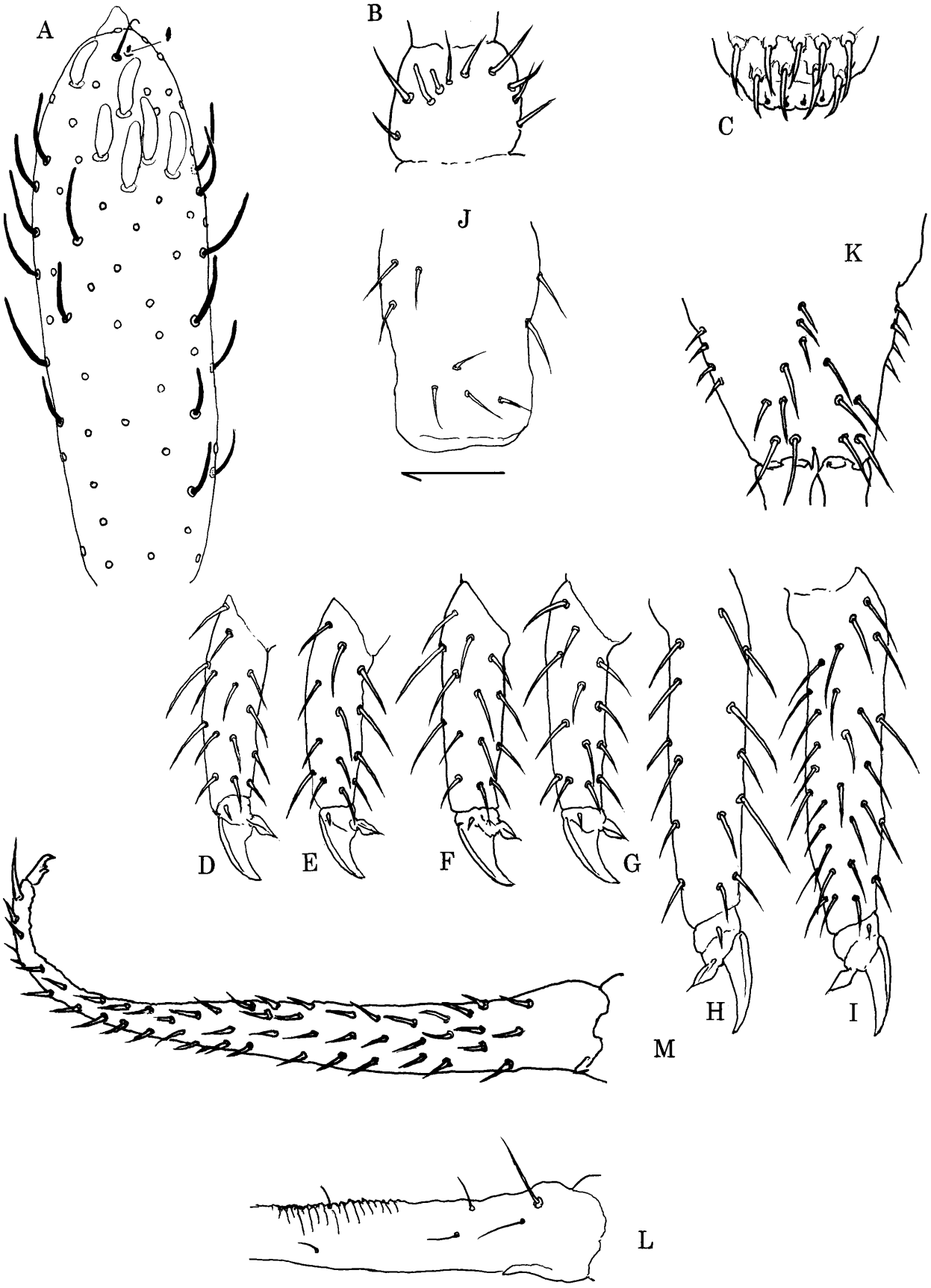

Fig. 5. *Isotomiella tamurai* sp. nov. A, Ant. IV; B, Ant. I; C, Labial chaetae; D-I, Chaetotaxy of tibiotarsus, inside (D, F, H) and outside (E, G, I) of legs I (D, E), II (F, G) and III (H, I); J, Ventral tube; K, Anterior side of manubrium; L, Posterior side of dens; M, Anterior side of dens and mucro.

with 4+4 distal, 3+3 anterior and 2+2 posterior chaetae (Fig. 5J). Tenaculum with 4+4 teeth and 1 chaeta. Furcal subcoxa anteriorly with 17-18 chaetae (of which 2 are ciliated), posteriorly with 9-10 chaetae (of which 7 are ciliated). Furca long (L : F = 3.2). Manubrium with 2+2, 2+2, 1+1 anterior-distal, 3 anterior-proximal and 4 lateral chaetae (Fig. 5K). Dens long and thin, with 6 posterior chaetae (Fig. 5L) and about 50 anterior chaetae (Fig. 5M), the most distal one being nearly twice as long as antero-distal one (Fig. 5M). Mucro tridentate. Genital plates in female with two chaetae each.

Males not found yet.

Holotype: South slope of Mt. Tsukuba, Tsukuba City, Ibaraki, Japan, 800 m, 5-Nov.-1983, H. Sakayori, leg. **Paratype:** 1 exp., same data as for holotype. Holotype (Type No. 3270, Kyushu Univ.) and 1 paratype are deposited in Entomological Laboratory, Faculty of Agriculture, Kyushu University.

Distribution: The species is common in lowlands of southwest Japan (Table 1; No. 12-25).

Remarks: By the presence of 5+5 anterior-distal, 3 anterior-proximal and 4 lateral manubrial chaetae, *Isotomiella tamurai* is related to *I. hirsuta*, *I. madeirensis* da Gama, 1959, *I. michonae* Deharveng & Suhardjono, 1994, *I. inthanonensis* Bedos & Deharveng, 1994 and *I. barisan* Deharveng & Suhardjono, 1994. *I. inthanonensis* has 29-38 anterior chaetae on dens and *I. barisan* 40-45 (about 50 in *I. tamurai*). *I. michonae* has ciliated chaetae on Ant. I (absent in *I. tamurai*). Original description of *I. madeirensis* noted only anterior chaetotaxy of manubrium (da Gama, 1959). Bedos & Deharveng (1994) pointed out that *I. madeirensis* had 7 posterior chaetae on dens (6 in *I. tamurai*). Lee (1977) redescribed *I. madeirensis* from Korea and illustrated that the species with 44 anterior chaetae on dens. Further *I. tamurai* is closely related to *I. hirsuta*, which is distributed in high altitude of Thailand, differing by the following characters: larger number of supplementary S-chaetae on Ant. IV, being around 17 (8-10 in *I. hirsuta*), smaller number of chaetae in the most proximal whorl of tibiotarsus I and II, being 6 (7 in *I. hirsuta*); smaller number of ciliated mesochaetae on Abd. IV, being only several (most chaetae ciliated in *I. hirsuta*). The specimens collected from Tokyo are all *Isotomiella tamurai* sp. nov, which has been ever reported as *I. minor* by Aoki *et al.* (1976).

Etymology: The species is named after Dr. Professor emeritus Hiroshi Tamura of Ibaraki University who is one of the leading Japanese collembologists at present.

Isotomiella fujisana sp. nov
[Japanese name: Fuji-menashi-tsuchi-tobimushi]
(Fig. 6)

Body length 0.7 mm. Color totally white. Eyes and PAO absent. Abd. V and VI totally ankylosed. Habitus entirely similar with that of *Isotomiella minor*. Integument dorsally without craters.

Axial chaetotaxy of Th. II-Abd. IV; 20, 14 / 6, 6, 6, 6. Macrochaetae ciliated and erected; 1, 1 / 3, 3, 3, 4 on half-tergite of Th. II-Abd. IV. Formula of s-chaetae of *minor*-type; 3, 2 / 0, 0, 1, 3, 5 on half-tergite of Th. II-Abd. V. Mesochaeta between spi and spe on Abd. IV smooth. Spl of Abd. V thick, rather long and about 3-4 times of sa, spe and spi chaetae, which are a little longer than s-chaetae of Abd. IV (Fig. 6A).

Antennae long (L : Ant. = 3.8). Chaetae S1-S6 on Ant. IV subequal and ovoid-elongate; supplementary S-chaetae on Ant. IV subequal, of which 4 are internal and about 5 external (Fig. 6B). Ant. I with about 15 ordinary smooth chaetae, none of them ciliated, and 2 unequal S-chaetae (S:s = 2.4) (Fig. 6C). Ant. I : II : III : IV = 13 : 21 : 21 : 35.

Legs without tenent hair, with six chaetae in the most proximal whorl of tibiotarsus I and II (Figs. 6D, E), seven on III (Figs. 6F, G). Unguis plump without inner tooth (Figs. 6D-G). Ventral tube with 4+4 distal, 3+3 anterior and 2+2 posterior chaetae. Tenaculum with 4+4 teeth and 1 chaeta. Manubrium with 4+4 anterior-distal and 3+3 lateral chaetae (Fig. 6H). Dens long and thin, with 6 posterior chaetae (Fig. 6I) and 30-36 anterior chaetae (Fig. 6H). The most distal chaeta nearly twice as long as antero-distal chaeta (Fig. 6H). Basal hooks of dens normal. Mucro tridentate.

Males not found yet.

Holotype: Mt. Fuji, Narusawa Village, Yamanashi, Japan, 2150 m, 9-Aug.-1974, K. Niijima leg. **Paratype:** 1 exp. same data as for holotype. Holotype (Type No. 3290, Kyushu Univ.) and 1 paratyepe are deposited in Entomological Laboratory, Faculty of Agriculture, Kyushu University.

Distribution: The species distributes in mountainous regions above 1500 m alt. in Japan (Table 1; No. 4-6, 10, 15).

Remarks: By the presence of 4+4 anterior-distal and 3 lateral manubrial chaetae, *Isotomiella fujisana* is closely related to *I. hygrophila*, which lives in very wet sites of Poland, differing by the following characters: higher proportion of S : s on Ant. I, 2.4 (1.6 in *I. hygrophila*); mesochaeta between spi and spe on Abd. IV smooth (ciliated in *I. hygrophila*). The specimens collected from Mt. Fuji are almost *I. fujisana*, which has been

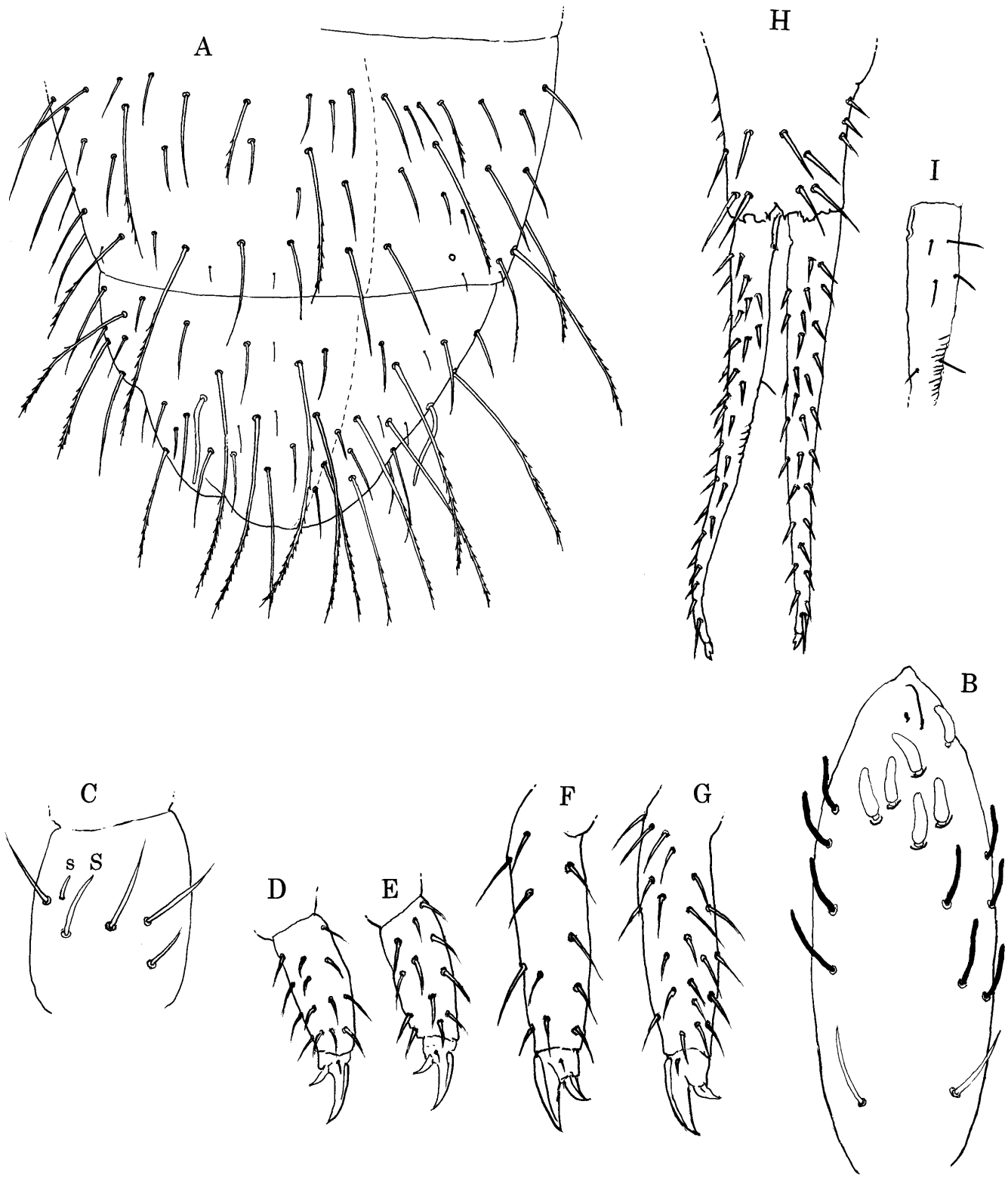

Fig. 6. *Isotomiella fujisana* sp. nov. A, Dorsal chaetotaxy of Abd. IV and V-VI; B, Ant. IV; C, Ant. I; D-G, Chaetotaxy of tibiotarsus, inside (D, F) and outside (E,G) of legs I (D, E) and III (F, G); H, Anterior side of furca; I, Posterior side of dens.

Table. 1. Collecting data of *Isotomiella* spp. in Japan

No.	Locality	Altitude (m)	Collecting date	Number of examined individuals			Collector and/or description on the site	Vegetation
				I. japonica	*I. tamurai*	*I. fujisana*		
1	Monomanai, Otoineppu Village, kamikawa, Hokkaido	450-470	3-Sep-69	2	-	-	Niijima, K.; Kitazawa et al., 1985	*Picea* forest
2	Nishi-shibetsu, Shibetsu City, Hokkaido	200-210	4-Sep-69	4	-	-	Niijima, K.; Kitazawa et al., 1985	*Abies* forest
3	Mt. Iwate, Takizawa Village, Iwate	1770	8-Sep-82	10*	-	-	Harada, 1993	*Alnus maximowiczii* Call. shrub
4	Mt. Hayachine, Ohasama, Hanamaki City, Iwate	1900	28-Jul-80	-	-	7	Harada, H.	unknown
5	Mt. Hayachine, Ohasama, Hanamaki City, Iwate	1700	28-Jul-80	1	-	1	Harada, H.	unknown
6	Mt. Akita-Komagatake, Tazawako, Senboku City, Akita	1510	26-Jul-80	-	-	13	Harada, 1993	*Alnus maximowiczii* Call. shrub
7	Mt. Gassan, Tachikawa, Syonai Town, Yamagata	1900	20-Aug-81	1	-	-	Harada, 1994	*Juniperus communis* L. var. *niponica* Wilson
8	Mt. Gassan, Tachikawa, Syonai Town, Yamagata	1850	20-Aug-81	1	-	-	Harada, 1994	*Alnus maximowiczii* Call. shrub
9	Mt. Zao-Meigoho-Oiwake, Zao town, Miyagi	1600	24-Aug-78	1	-	-	Imadate, G.	unknown
10	Nanamori, Yamato, Kitakata City, Fukushima	1680	28-Aug-82	1	-	1	Harada, H.	unknown
11	Mt. Hiuchi, Myoko City, Niigata	2120	21-Aug-83	1	-	-	Harada, H.	unknown
12	Yunishigawa, Kuriyama, Nikko City, Tochigi		19-Oct-80	-	6	-	Tanaka, S.	Deciduous broad-leaved forest
13	South slope of Mt. Tsukuba, Tsukuba City, Ibaraki	800	5-Nov-83	-	3*	-	Sakayori, H.	unknown
14	Shibuya-ku, Tokyo	40	11-Apr-75	-	47	-	Aoki et al., 1976	Evergreen broad leaved forest
15	Mt. Fuji, Narusawa Village, Yamanashi	2150	9-Aug-74	1	1	27*	Niijima, 1976	Subalpine coniferous forest
16	Iwasaki Town, Toyohashi City, Aichi	90-190	26-May-77	-	52	-	Niijima, K.	*Pinus thunbergii* Parl. forest
	ditto		20-Jul-77	-	12	-	Niijima, K.	ditto
	ditto		4-Oct-77	-	11	-	Niijima, K.	ditto
	ditto		14-Jul-78	-	9	-	Niijima, K.	ditto
	ditto		23-Jun-81	-	14	-	Niijima, K.	ditto
17	Iyadani, Matsuo, Ikeda, Miyoshi City, Tokushima	260	5-Apr-05	-	7	-	Tanaka, S.	Evergreen broad-leaved forest
18	Kazura Bridge, Nishi-iyayama, Miyoshi City, Tokush	400	5-Apr-05	-	11	-	Tanaka, S.	Evergreen broad-leaved forest
19	Higashi-oyama, Ipponmatsu, Ainan Town, Ehime	10	6-Apr-05	-	6	-	Tanaka, S.	Evergreen broad-leaved forest
20	Exit of Ryugado Cave, Tosayamada, Kami City, Kochi	260	5-Apr-05	-	14	-	Tanaka, S.	Evergreen broad-leaved forest
21	Nanako Pass, Kure, Nakatosa Town, Kochi	215	6-Apr-05	-	20	-	Tanaka, S.	Evergreen broad-leaved forest
22	Noji, Sukumo City, Kochi	30	6-Apr-05	-	6	-	Tanaka, S.	Evergreen broad-leaved forest
23	Nakano, Saiki City, Oita	70	7-Apr-05	-	12	-	Tanaka, S.	Evergreen broad-leaved forest
24	Santaro Pass, Sumiyo, Amami City, Kagoshima	270	19-Mar-80	-	2	-	Tanaka, S.	Evergreen broad-leaved forest
25	Funaura, Iriomote Island, Taketomi Town, Okinawa	60	5-Feb-84	-	2	-	Nakatani, J.	unknown
	Total			23	235	49		

* including a holotype and a palatype.

ever reported as *I. minor* by Niijima (1976).

Etymology: The species is named from Mt. Fuji-san, the highest mountain in Japan, where the species lives.

Discussion

Isotomiella minor from Japan was first reported by Yosii (1939). The specimens were collected from Mt. Hyonosen, Tottori and Mt. Tsurugi, Tokushima, but he did not illustrate anterior view of manubrium. Yosii reported *I. minor* from Shiga Hights, Nagano (Yosii, 1969) and Hidaka mountains, Hokkaido (Yosii, 1972) without any descriptions, but noted that 'refer to Yosii (1966) for details'. The description of *I. minor* collected from Himalaya (Yosii, 1966) contains two types of manubrium anterior chaetotaxy. Both of them are different from those in Japan. Suma (1984) reported *I. minor* from the seashore of east Hokkaido, illustrating Ant. IV, claw of leg III, mucro and habitus. On the other hand, it was desired that the records of *I. minor* from Japan should be re-examined.

Therefore we did have the re-examination and found that the *Isotomiella* fauna in Japan are composed of three species as summarized below. The specimens collected from the northeast Japan are very similar to *I. minor* except chaetotaxy of Abd. I and chaetae on anterior side of manubrium. The chaetotaxy of examined specimens were so stable that we described the form as *Isotomiella japonica* sp. nov. The specimens collected from the southwest Japan have almost the same characters with *I. hirsuta* Bedos & Deharveng, 1994 except chaetotaxy of Ant. IV, tibiotarsus and Abd. IV. Those characters were regarded as to be very stable and its intraspecific variation was null or very limited (Deharveng, 2004). Therefore, we described the species as *Isotomiella tamurai* sp. nov. The specimens collected from the mountainous regions are very similar to *I. hygrophila* Sterzyńska & Kapruś, 2001, except chaetotaxy of Ant. I and Abd. IV, so we describe the species as *Isotomiella fujisana* sp. nov.

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摘 要

田中真悟（〒819-0041 福岡市西区拾六町 5-9-40），新島溪子（〒168-0064 東京都杉並区永福 4-12-18）：3 新種の記載を含む日本産メナシツチトビムシ属.

日本産メナシツチトビムシ属 *Isotomiella* は従来，メナシツチトビムシ *Isotomiella minor* Schäffer の 1 属 1 種として考えられてきた．しかし，このたび著者らは日本各地で採集されたメナシツチトビムシ属 307 個体を詳しく検鏡しなおした．その結果，形態上の相違に加えて分布域を異にする 3 種を識別することができた．メナシツチトビムシ *I. minor* に酷似する種は，腹部第 I 節の毛の配列と跳躍器柄節前面の毛の形状が異なることから，新種ヤマトメナシツチトビムシ *Isotomiella japonica* sp. nov. として記載した．この種は北海道，岩手，山形，宮城，福島，新潟，山梨など，日本の北東部にのみ生息していた．*I. hirsuta* Bedos & Deharveng に近い種は，触角第 IV 節の感覚毛の数と脛附節および腹部第 IV 節の毛の配列が異なることから，新種タムラメナシツチトビムシ *Isotomiella tamurai* sp. nov. として記載した．また，*I. hygrophila* Sterzyńska & Kapruś に酷似する種は，触角第 I 節の S：s 比，および腹部第 IV 節の毛の形状が異なることから，新種フジメナシツチトビムシ *I. fujisana* sp. nov. として記載した．タムラメナシツチトビムシは日本の南西寄りの栃木，茨城，愛知，徳島，高知，愛媛，大分，鹿児島，沖縄の各県に多数生息する普通種で，フジメナシツチトビムシは東北地方および富士山の標高 1500 m以上の山地に分布する.

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